

REMARKS/ARGUMENTS

Favorable reconsideration of this application, in light of the present amendments and following discussion, is respectfully requested.

Claims 1-13 are pending. By this Amendment, Claims 1, 9 and 13 are amended. No new matter has been added. Support for the amendments to Claims 1 and 9 is disclosed in Figs. 1 and 3.

The Office Action rejects Claims 1-13 under 35 U.S.C. § 112, second paragraph. Claims 1 and 9 are amended to obviate this rejection.

The Office Action rejects Claim 13 as being a duplicate of Claim 8. Claim 13 is amended to obviate this rejection.

The Office Action rejects Claims 1-5, 9 and 10 under 35 U.S.C. § 102(b) over U.S.P. 6,651,546 to Sandlin, Claims 6 and 11 under 35 U.S.C. § 103(a) over Sandlin in view of U.S.P. 2,915,043 to Neiner and Claims 7 and 12 under 35 U.S.C. § 103(a) over Sandlin in view of U.S.P. 5,957,028 to Tischer et al. These rejections are respectfully traversed.

Before considering the rejections under 35 U.S.C. § 102 and 35 U.S.C. § 103, it is believed that a brief review of the subject matter of the independent claims would be helpful.

Claim 1 is directed to a multistage stroke cylinder apparatus. A main cylinder includes a main piston housed for sliding in a cylinder tube and driven by fluid pressure supplied to pressure chambers on opposite sides of the main piston. A main rod is connected to the main piston. A head cover and a rod cover are mounted to opposite ends of the cylinder tube. An intermediate stop position setting mechanism sets an intermediate stop position of the main piston. A return position setting mechanism sets a return position of the main piston. The intermediate stop position setting mechanism includes a stop position setting piston disposed for sliding between the main piston and the cylinder tube and the head cover to define the intermediate stop position of the main piston by coming in contact with

the main piston. An auxiliary rod is connected to the stop position setting piston and has a tip end passing through the head cover and extending outside of the head cover. The stopper is fitted to the tip end of the auxiliary rod to stop the stop position setting piston in a necessary position by coming in contact with a contact portion of the head cover. A changing mechanism changes a stop position of the stop position setting piston when said stopper comes in contact with the contact portion. The return position setting mechanism includes a return position setting piston provided for sliding in the head cover. A position setting rod is connected to the return position setting position and has a tip end projecting so as to directly act on and behind the stop position setting piston.

Claim 9 is directed to a multistage stroke cylinder apparatus including, *inter alia*, a changing mechanism having at least one of a mechanism for changing a mounting position of the stopper on the auxiliary rod and a mechanism for changing a position of the contact portion by a contact position adjusting piston. The mechanism for changing the mounting position of the stopper has a plurality of stepped portions formed on opposite sides of an inner hole of the stopper having different depths and a step portion formed on an outer periphery of the auxiliary rod and formed to be able to change the mounting position of the stopper on the auxiliary rod by changing an orientation of the stopper to selectively bring any of the step portions into contact with the stepped portion of the auxiliary rod. The mechanism for changing the position of the contact portion has the contact position adjusting piston having the contact portion and the adjusting piston is mounted to the head cover and driven by fluid pressure in such directions as to approach and move away from the stopper.

In Claims 1 and 9, the stopped position setting piston comes in contact with the main piston to define the intermediate stop position. A return position is set due to a tip end of a rod 44 of the return position setting piston 43 directly acting on the stop position setting piston 21. A stop position of the stop position setting piston 21 is set by a stopper coming

into contact with the contact portion 31a formed in the head cover 14. A changing mechanism changes a stop position of the stop position setting piston 21 when the stopper 23 comes in contact with the contact portion 31a.

Sandlin discloses a structure that has a main piston 156 and a rod 189 positioned in a multistage by four pairs of intermediate position determining members including pistons 152/153/154/155, tubes 161/162/163/164 and collars 165/166/167. Return position determining members include four pistons 115/116/117/118 and a push rod or interstage pushing rod 148.

If it is assumed that piston 155, tube 164 and collar 168 correspond to the intermediate stop position setting mechanism, then Sandlin discloses that a position setting rod 148 only indirectly comes in contact with a main piston 156 through a plurality of pistons 152-154. The collar (stopper) 168 only indirectly comes in contact with a plate 112 through a plurality of collars 167, 166, 165. Collars 165-167 are not for changing a position where collar (stopper) 168 comes in contact with plate 112.

If it is assumed that piston 152, tube 161 and collar 165 of Sandlin correspond to the intermediate stop position setting mechanism, then Sandlin discloses a piston 152 for setting a stop position that only indirectly comes into contact with the main piston 156 through a plurality of pistons 153-155. A mechanism for changing a contact position of the collar (stopper) 165 toward the plate 112 is not disclosed. Thus, under either the former or the latter arrangements Sandlin does not provide the features of independent Claims 1 and 9.

Neiner and Tischer et al. do not provide the deficiencies of Sandlin.

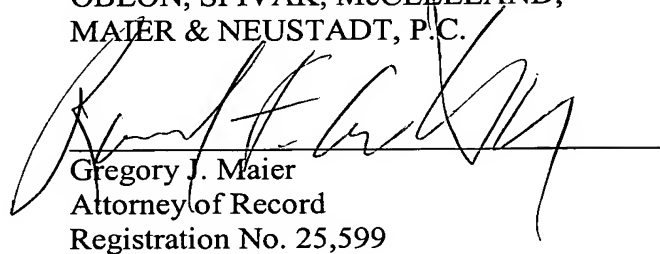
The dependent claims are allowable for at least the reasons discussed above as well as for the individual features they recite. Withdrawal of the rejection of the dependent claims is respectfully requested.

For the foregoing reasons, it is respectfully submitted that this application is now in condition for allowance. A Notice of Allowance is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicants' undersigned representative at the telephone number listed below.

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